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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, STEVEN H D	
ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/004,280	BROWN, DAVID A.	
	Examiner	Art Unit	
	Steven HD Nguyen	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,5,8,9,13,14,17,18 and 22-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-5, 8-9, 13-14, 17-18 and 22-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment filed on 8/5/05. Claims 1-3, 10-12 and 19-21 have been canceled and claims 4-5, 8-9, 13-14, 17-18 and 22-26 are pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 4-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hariguchi (USP 6956858).

Regarding claim 4, Hariguchi discloses a method for updating a multi-level lookup table (Fig 3, ref 80 is a multilevel lookup table to be used in the updating the routes) comprising the steps of providing a default route memory (Fig 18, ref 230 is default route memory) for storing an inherit indicator (Fig 3, ref pBlkDef, pointer to the block default route which corresponds a route associated with a root of level of another level, See table default route, col. 17, lines 30 to col. 18, lines 9) to indicate that the default route corresponding to the route associated with the root of the sub-tree is inherited from another sub-tree, wherein the inherited default route is forwarded by a default index pipeline (Col. 9, lines 10 to col. 10, lines 18); sharing the default

route by nodes in the sub-tree (Fig 18, the default route table is shared by the elements in the level); and modifying the default route by performing a single write to the default route memory (Fig 12, 14 discloses a single write being used for writing a default route into the memory).

Regarding claim 5, Hariguchi discloses a method for updating a multi-level lookup table (Fig 3, ref 80 is a multilevel lookup table to be used in the updating the routes) comprising the steps of providing a default route memory (Fig 18, ref 230 is default route memory) for storing a default route for a sub-tree, wherein the sub-tree is a dense sub-tree and a dense sub-tree descriptor associated with the sub-tree includes the default route memory (See table default route, col. 17, lines 30 to col. 18, lines 9 and Fig 18 is a dense level, 655536 elements); sharing the default route by nodes in the sub-tree (Fig 18, the default route table is shared by the elements in the level); and modifying the default route by performing a single write to the default route memory (Fig 12, 14 discloses a single write being used for writing a default route into the memory).

Regarding claim 6, Hariguchi discloses the default route is shared by storing a use default indicator in a mapper entry associated with at least one node in the sub-tree (Fig 18, pointer block default route to pointer a default route table).

Regarding claim 7, Hariguchi discloses returning the default route as a result of a search of the lookup table upon detecting the use default indicator stored in the mapper entry (Col. 9, lines 35-54).

Regarding claim 8, Hariguchi inherently discloses the sub-tree is a sparse sub-tree, the number of routes in the sparse sub-tree is greater than one and a sparse sub-tree entry associated with the sub-tree includes the default route memory (it is inherently disclosed because in the

longest matching method. One side of level will be dense such left and the other side such right is sparse when dense side has default route memory then sparse side also has the default route memory).

Regarding claim 9, Hariguchi inherently discloses the sub-tree is a sparse sub-tree, the number of routes in the sparse sub-tree is one, and a default route memory associated with the sparse sub-tree stores the default route (it is inherently disclosed because an element must pointer to a default route).

4. Claims 13-14 and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ahuja (USP 5946679).

Regarding claims 13 and 22, Ahuja discloses a multi-level lookup table comprising a default route memory which stores an inherent indicator to indicate that a default route associated with root of the sub-tree is inherited from another (Fig 9); and default logic which returns the default route as a result of a search of the lookup table (Fig 4, ref 445 which is returned a default route after performing a lookup); a default index pipeline which forwards the inherited default route (col. 8, lines 29-32 and col. 13, lines 22-28).

Regarding claims 14 and 23, Ahuja discloses a multi-level lookup table comprising a default route memory which stores a default route shared by nodes in a sub-tree (Fig 9), wherein the sub-tree is a dense sub-tree and a dense sub-tree entry associated with the sub-tree includes the default route memory (Fig 9) and default logic which returns the default route as a result of a search of the lookup table when detecting a default route pointer (Fig 4, ref 445 which is returned a default route after performing a lookup).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 15-18 and 24-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Ahuja (US 5946679) in view of Hariguchi (USP 6956858).

Regarding claim 15-18 and 24-26, Ahuja fails disclose the claimed invention. in the same field of endeavor, Hariguchi discloses a mapper entry associated with at least one node in the subtree, the mapper entry stores a use default indicator which indicates that the default route stored in the default route memory is the default route for the at least one node (Fig 3, ref pBlkDef, pointer to the block default route which corresponds a route associated with a root of level of another level, See table default route, col. 17, lines 30 to col. 18, lines 9), the default route is modified by performing a single write to the default route memory (Fig 12, 14 discloses a single write being used for writing a default route into the memory); the default logic returns

the default route upon detecting the use default indicator stored in the mapper entry (Col. 9, lines 35-54); the sub-tree is a sparse sub-tree number of routes in the sparse sub-tree is greater than one and a sparse sub-tree entry associated with the sub-tree includes the default route memory (it is implicitly disclosed because in the longest matching method. One side of level will be dense such left and the other side such right is sparse when dense side has default route memory then sparse side also has the default route memory); the sub-tree is a sparse sub-tree, the number of routes in the sparse sub-tree is one, and the default route memory is stored in a default mapper entry associated with the sparse sub-tree descriptor (it is implicitly disclosed because an element must pointer to a default route).

Since, Hariguchi suggests a method and system for performing a lookup and updating a routing table. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a method and system for using a default route memory in order to performing a single write when updating the routing table as disclosed by Hariguchi into Ahuja. The motivation would have been to reduce the cost of updating a routing table.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven HD Nguyen
Primary Examiner
Art Unit 2665
10/30/05